COUNTY OF SUFFOLK

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SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
DIVISION OF ENVIRONMENTAL QUALITY

STANDARDS FOR APPROVAL OF PLANS AND
CONSTRUCTION FOR SEWAGE DISPOSAL SYSTEMS
FOR OTHER THAN SINGLE FAMILY RESIDENCES

APPENDIX F

STANDARDS AND PROCEDURES FOR THE DESIGN AND INSTALLATION OF GROUNDWATER MONITORING WELLS AT SEWAGE TREATMENT PLANTS AND MODIFIED SUBSURFACE SEWAGE DISPOSAL SYSTEMS

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F1. APPLICABILITY AND PURPOSE

These standards and procedures are issued pursuant to Title 6, Part 756 of the New York State Code of Rules and Regulations (SPDES Monitoring, Recording and Reporting) and Article 4, Section 404 of the Suffolk County Sanitary Code (Enforcement Provisions; Powers and Duties of the Commissioner), and apply to all sewage treatment plants and modified subsurface sewage disposal systems in Suffolk County with effluent disposal to groundwater. The monitoring wells specified herein are designed to provide a means of obtaining shallow groundwater quality samples in proximity to sewage treatment plant effluent discharges to assure that SPDES permit conditions are being met, to determine whether such conditions are adequate to protect groundwater, and other purposes determined by the Commissioner of the Suffolk County Department of Health Services (SCDHS).

F2. PLAN SUBMISSION AND APPROVAL

The applicant must provide all required information for the proper siting and installation of monitoring wells. Three (3) copies of plans must be submitted for SCDHS review and approval; these plans must include a detailed site drawing (at an appropriate scale) indicating the following items:

a) The location(s) and size(s) of all proposed (and/or existing) wastewater disposal facilities (leaching pools, recharge beds, tile fields, etc.).
b) The location(s) of all proposed (and/or existing) underground utilities, overhead power lines, fencing, roadways, landscaping, or other items that could limit access to wells, inhibit installation, or require modification of well construction at grade.
c) The locations of all proposed (and/or existing) monitoring wells, with numbers to identify each well site.
d) The assumed direction of groundwater flow.

Plan submissions must include a completed SCDHS shop drawing form for each proposed well (and existing well to be utilized) indicating the manufacturer and specifications of materials to be used (or previously used) in well construction.

No well installation activities may be performed until written approval and stamped drawings are received from the SCDHS. Any subsequent changes in well locations or construction specifications must be approved in writing by the SCDHS.

F3. MONITORING WELL SITING

The required array of monitoring wells must provide a means of determining the groundwater impacts of plant discharges on a continuous basis, and must include the following components:

a) One well to monitor ambient groundwater quality upgradient of the effluent disposal facilities. This well should generally be located at least 50 feet upgradient of any such facilities, beyond the influence of mounding at the water table caused by the recharged effluent.
b) A minimum of two downgradient wells to monitor the impact of recharged effluent. These wells should generally be located no more than 25 feet downgradient of disposal facilities. The required number of downgradient wells will depend on the number and distances between disposal facilities (e.g., recharge beds, leaching pool clusters), and their orientation with respect to the direction of groundwater flow.
c) For modified subsurface sewage disposal systems a single well is required to be located within 10 feet downgradient of disposal facilities.

The adequacy of proposed monitoring well arrays will be determined by the SCDHS based on information contained in the plan submission, and on the groundwater flow direction and quality data collected by the SCDHS from the wells initially installed. The SCDHS reserves the right to require the installation of additional monitoring wells, for cause, at any time.

F4. **MONITORING WELL CONSTRUCTION STANDARDS**

All new sewage treatment plant monitoring wells must conform to the following construction standards:

a) Casings: 2" I.D. Schedule 40 or 80 PVC; flush threaded.
b) Screens: 2" I.D. Schedule 40 or 80 PVC; .020" slots.
c) Filter Pack: Silica sand, uniformity coefficient ≤ 1.7, effective size ≥ 0.35", 2' above top of screen.

The screened interval will generally be from 5 feet above to 10 feet below the static water level; however, a modified screened interval, or the use of a screen length greater than 15 feet, may be required based on long-term local water table fluctuations, or the expectation of a seasonal water level extreme at the time of drilling.

Grouting of the annular space above the filter pack is desirable, but not required; when included, a seal of fine silica sand (a minimum of 2' thick) must be placed between the filter pack and grouting.

Wells finished above grade must be protected by 4" I.D. steel casings secured with concrete collars and unthreaded, lockable caps. Wells finished below grade must be protected by suitable roadway, service, or meter boxes (min. 6" I.D.) with pentagon head bolts and "WATER" or similar lettering; the PVC casings within the boxes must be provided with unthreaded, lockable caps. The State identification number must be stamped or etched on the cap of each well.

Access to all wells by the SCDHS and by the New York State Department of Environmental Conservation during normal working hours shall be assured.

Proposals for the use of pre-existing monitoring wells, or construction specifications other than those listed above, will be considered by the SCDHS on a case-by-case basis.

F5. **CONSTRUCTION PHASE REQUIREMENTS**

The applicant or his well drilling contractor must notify the SCDHS three business days prior to the commencement of drilling operations. This prior notification will allow the SCDHS to conduct field inspections to verify adherence to standards and specifications, and will provide the contractor the opportunity to have on-site drilling questions resolved. SCDHS personnel must be present at the time of well development to verify the production of sediment-free formation water, and to collect initial water quality samples.

F6. **FINAL DOCUMENTATION AND APPROVAL**

Final approval of the monitoring well array installation is contingent upon the receipt, verification, and acceptance by the SCDHS of the following items:

a) "As-built" drawings signed by a NYS Professional Engineer or Registered Architect detailing the construction of each well. These drawings must indicate the absolute elevation of the measuring point of each well relative to the National Geodetic Vertical Datum (as certified by a Licensed Surveyor); the measuring point for a well finished above grade is the north side of the top of the PVC casing, and for a well finished below grade, the north side of the open cap on the PVC casing.
b) A site sketch at a scale suitable to allow the SCDHS to locate each well on a USGS quad map. This site sketch must include distances to street intersections.
c) A copy of the NYSDEC Well Completion Report for each well that includes a driller's log and the depth of static water from grade.

Final approval is also contingent upon the following conditions:

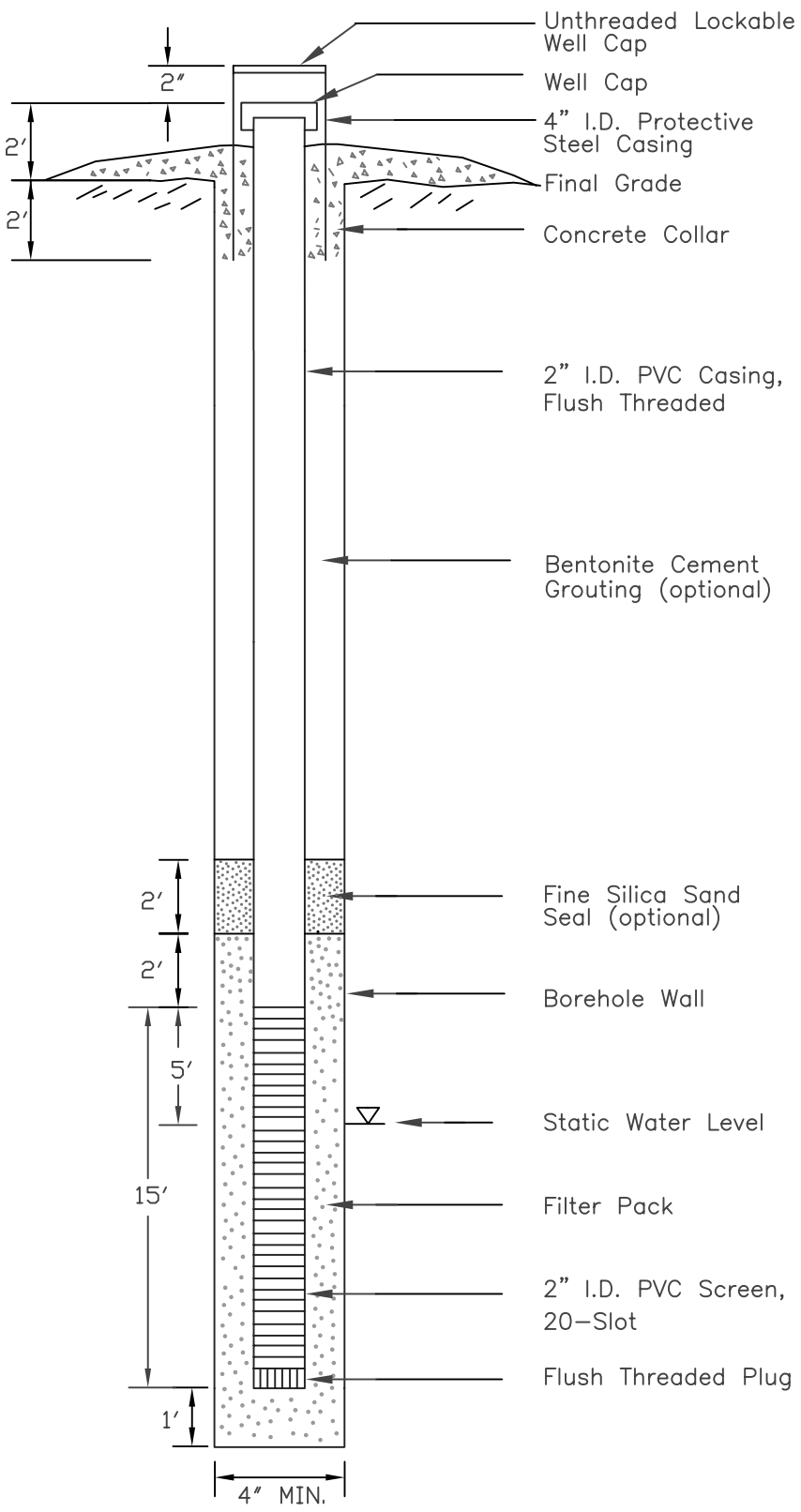
d) Initial water quality samples collected and analyzed by the SCDHS are found to be satisfactory; and,
e) Water table elevation measurements taken by the SCDHS confirm the assumed direction of groundwater flow.

Final approvals will be issued in writing to the applicant, as will a full description of any problems holding up final approval, including, but not limited to, a determination of the need for additional monitoring wells.

F7. **VARIANCES**

The Commissioner of the Department of Health Services, in his discretion, upon written application, may grant a variance from a specific provision of these regulations, in a particular case, subject to appropriate conditions, where such variance is in harmony with the general purposes and intent of these regulations, after such variance application has been considered by a Department Review Board. Variances are subject to review and revocation when necessary to ensure a satisfactory monitoring system. Variances from the requirement of monitoring well installation will require concurrence by the New York State Department of Environmental Conservation.

TYPICAL MONITORING WELL DETAIL



STP Well Shop Drawing Form

Date: _____
Project Name: _____
_____
Well Site #: _____
Driller: _____
Drilling Method: _____

Casing:
Manufacturer: _____
Type: ___ Sched. 40 __ Sched. 80

Screen:
Manufacturer: _____
Type: ___ Sched. 40 __ Sched. 80
Type: ___ Wire-Wound __ Slotted

Filter Pack:
Manufacturer: _____
Uniformity Coefficient: _____
Effective Size:_____

Note 1: Screen setting and/or length may be modified to meet local conditions.

Note 2: Attach separate sheet for wells to be finished below grade showing construction details.